United States Department of the Interior

FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
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	Initial	Assigned
Manager	LW	
Executive/ Support Services		
Lands & Minerals		
NEPA		✓
Renewables		
BUREAU OF LAND MGMT, VERNAL, UTAH		
ALL EMPLOYEES		

In Reply Refer To
FWS/R6
ES/UT
9-F-0151
6-UT-09-F-019

July 10, 2009

Memorandum

To: Field Manager, Vernal Field Office, Bureau of Land Management, Vernal, Utah

From: Utah Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, West Valley City, Utah

Subject: Formal Section 7 Consultation, Ten Year Grazing Permit Issuance Renewal for 30 Allotments

In accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), this transmits the Fish and Wildlife Service's (Service) biological opinion for impacts to federally listed species from the Bureau of Land Management's (BLM) Ten Year Grazing Permit Issuance Renewal for 30 Allotments. Reference is made to your memorandum dated May 14, 2009 and attached biological assessment (BA) requesting initiation of consultation for the subject action. Based on the information presented in the biological assessment (BA) and additional information that BLM provided through personal communications, I concur that the proposed action may adversely effect the clay reed-mustard (*Schoenocrambe argillacea*), shrubby reed-mustard (*Schoenocrambe suffrutescens*), Pariette cactus (*Sclerocactus* brevispinus), Uinta Basin hookless cactus (*Sclerocactus wetlandicus*), Ute ladies'-tresses (*Spiranthes diluvialis*), bonytail (*Gila elegans*), humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius*), and razorback sucker (*Xyrauchen texanus*).

Based on the information provided in the BA, I concur that the proposed project may affect, but is not likely to adversely modify designated critical habitat for the Colorado River fish listed above. Our concurrence is based, in part, on the applicant committed environmental protection measures designed to avoid or minimize negative effects in the action area: see Section IV, Proposed Action Committed Mitigation in the BA. I also concur that the proposed action may impact, but is not likely to contribute to the need to list the White River beardtongue (*Penstemon scariosus* var *albifluvis*) and yellow-billed cuckoo (*Coccyzus americanus*).

Consultation History

Upon receipt of your memorandum dated May 14, 2009, our office received your request for formal section 7 consultation on the proposed permit renewal.

Service and BLM biologists have previously discussed the proposed grazing impacts to listed species and developed conservation measures to address those impacts.

Biological Opinion

I. Description of Proposed Action

The purpose of this action is the reissuance of 10-year grazing permits for the following 30 allotments located in Duchesne and Uinta Counties, Utah (Table 1; Figure 1). The proposed action would include season of use modifications for each allotment and deferments for some. Deferments may be used to prevent grazing of cool season grasses during the early spring months or to prevent impacts to plant species of concern. Season of use modifications will include removing cattle from sensitive areas during spawning and larval fish periods during the summer months. This may be accomplished by the use of pastures to separate forage areas from livestock or by the permittee not using the allotment during certain times of the year in alternating years. Specific information regarding each allotment can be found in the BA (BLM 2009, Table 2, pp 3-5).

Monitoring, including utilization and trend studies, will be implemented in each allotment to help insure proper livestock use and to determine impacts to vegetation from other consumptive uses (e.g. mineral development) in the allotments. BLM will conduct monitoring in coordination with the permittee. Goals will be to improve livestock distribution and limit undue use of key upland vegetation species. Specific goals and mandatory terms and conditions for these grazing permits are outlined on pages 5 and 6 of the BLM's BA (BLM 2009) for this action. Additionally, standard terms and conditions applicable to all grazing permits are outlined in the BA (BLM 2009, pp 6-7).

Description of the Action Area

The action area for the reissuance of the grazing permits includes all areas affected by the proposed action within and up to 0.25 river miles downstream (Green and White Rivers) of the above listed 30 grazing allotments. The action area is located within Duchesne and Uinta Counties, Utah and is approximately 733,356 acres in size.

Table 1. Proposed season of use for each allotment considered in this consultation.

Allotment	Proposed Season of Use
Asphalt Draw (*)	October 1 – May 1
Baeser Wash (*)	October 1 – May 1
Birchell	October 1 – April 1
Bohemian Bottoms (*)	September 1 – May 1
Bull Canyon	October 1 – May 1
Castle Peak	October 1 – May 1
Devil's Canyon	October 1 – May 1
Eight Mile Flat	October 1 – May 1
Green River (*)	October 1 – May 7
Green River AMP (*)	April 1 – May 31; and September 1 – October 31
Green River Bottoms (*)	October 1 – May 1
Hatchbroome Bartholomew	October 1 – April 1 (or May 1 with deferment)
Hells Hole (*)	October 1 – May 1
Jensen (*)	October 1 – May 15
Kane Hollow (*)	October 1 – May 12
Little Desert (*)	October 1 – May 1
Max Canyon	October 1 – May 1
Oil Shale	November 15 – April 15
Olsen AMP (*)	October 1 – May 1
Sand Wash	October 1 – April 1 (or May 1 with deferment)
Seven Sisters (*)	October 1 – May 1
Southam Canyon (*)	October 1 – May 1
Stirrup (*)	September 1 – May 1
Thorne-Ute-Broome	October 1 – April 1 (or May 1 with deferment)
Twelve Mile	October 1 – May 1
Walker Hollow (*)	October 1 – May 1
Watson	October 1 – May 1
West Deadman (*)	October 1 – May 1
Wetlands (*)	October 1 – May 1
White River Bottoms	August 15 – May 1

(*) – Allotments that are either adjacent to or contain critical habitat for the four federally endangered fish species.

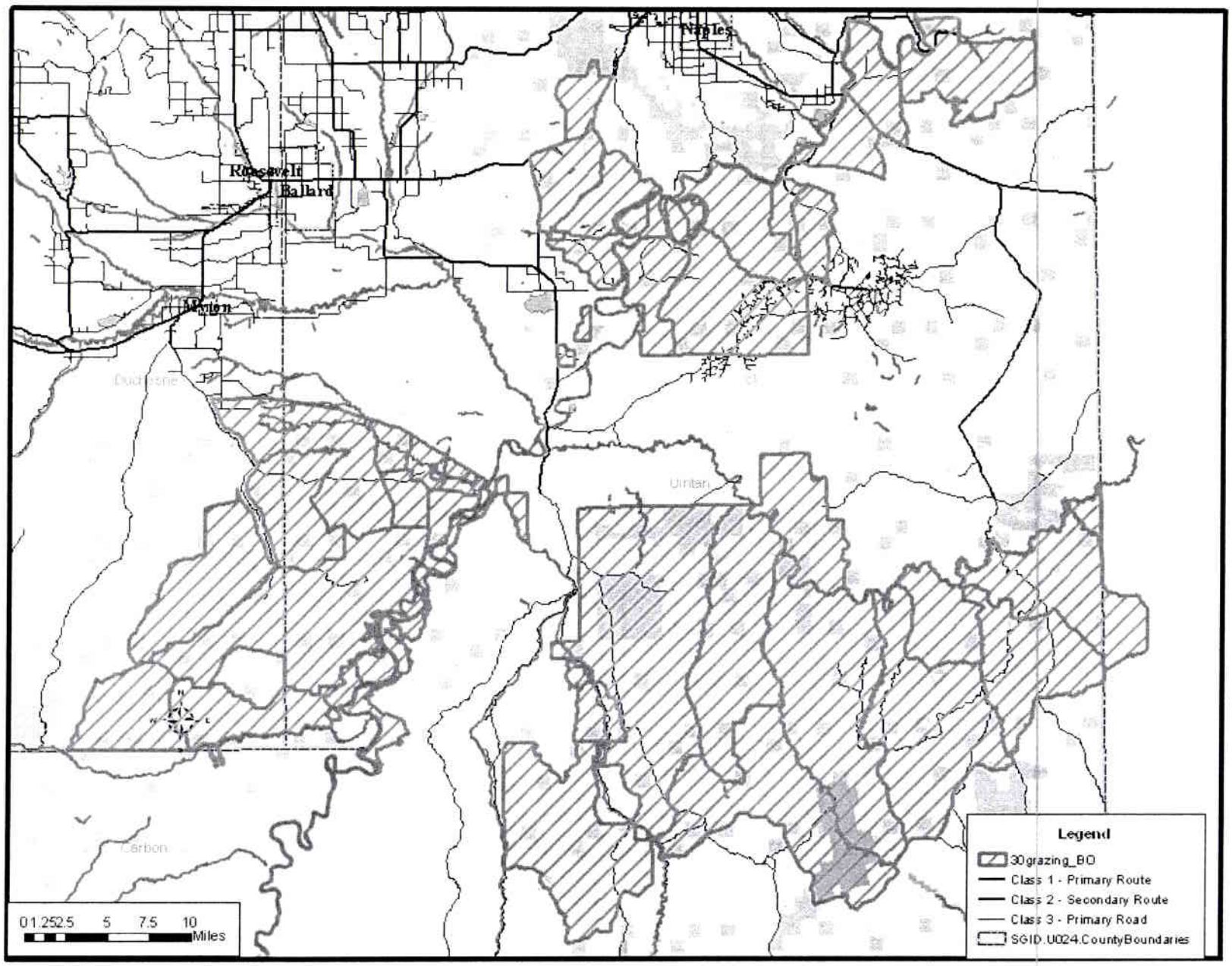

Figure 1. Location of 30 grazing allotments analyzed in this biological opinion.

Bureau of Land Management Committed Conservation Measures

The BLM's Vernal Field Office Record of Decision and Approved Resource Management Plan (RMP) (Appendix L) (BLM 2008) lists a number of BLM-committed conservation measures. These conservation measures come from the biological opinion for the existing Utah BLM RMP, the Amendment of Informal Oil and gas Lease Sales Consultation (05-0215), and the Utah BLM RMP biological opinion (6-UT-07-F-0018) conservation measures. Measures that apply to livestock grazing for plant and animal species of concern are identified below.

The following BLM-committed conservation measures will minimize the impacts of the proposed action to the Clay reed-mustard (*Schoenocrambe argillacea*), Shrubby reed-mustard (*Schoenocrambe suffrutescens*), Pariette cactus (*Sclerocactus* brevispinus), Uinta Basin hookless cactus (*Sclerocactus glaucus*), and Ute ladies'-tresses (*Spiranthes diluvialis*) and occupied habitat (BLM 2009, pp 6-8):

- BLM shall continue to document new populations of the above mentioned federally listed plants as they are encountered.

- No supplements (salt/mineral blocks, molasses tubs, reservoirs, etc.) will be allowed within 660 feet of known plant species of concern.

- No sheep camps will be allowed within 660 feet of known plant species of concern.

- To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support these species.

- BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery and determined in coordination with the FWS).

- Monitoring plots will be established within the allotments to assist in documenting the direct or indirect impacts due to grazing.

All of these measures will be implemented as a part of the proposed action.

The following BLM committed conservation measures will minimize the impacts of the proposed action to the bonytail (*Gila elegans*), humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius*), and razorback sucker (*Xyrauchen texanus*) and their designated critical habitat (BLM 2009, pp. 5-8):

- BLM shall notify the Service immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate

that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of Service authorities.

- Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.
    - BLM will avoid impacts where feasible, to habitats considered most important to species recovery, which include backwaters, side channels, and oxbows. These habitats are vital spawning, feeding, nursery and rearing areas[1].

- BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:
    - Protections against toxic spills into rivers and floodplains;
    - Plans for sedimentation reduction;
    - Minimization of riparian vegetation to be destroyed;
    - Minimization of impacts to backwater nursery habitat;
    - Allow for only minimum impacts on water quality at the 25-year frequency runoff.

- Key herbaceous vegetation, where stream bank stability is dependent upon it, would have a minimum stubble height of four inches on the stream bank along the green line at the end of the growing season.

- Key riparian browse vegetation would not be used for more than 30% of the current annual twig growth that is within the reach of the grazing animals.

All of these measures will be implemented as a part of the proposed action.

II. Status of the Species / Critical Habitat

The purpose of this section is to summarize the best available information regarding the current range wide status of the listed fish and plant species. Additional information regarding listed species may be obtained from the sources of information cited for these species.

A. Clay Reed-Mustard

Species Description

Duane Atwood first discovered the Clay reed-mustard in 1976 in the southern portion of the Uinta Basin in Utah. Clay reed-mustard is a perennial herbaceous plan with sparsely leafed stems 15 to 30 cm (6 to 12 inches) tall arising from a woody root crown. The leaves are very

[1] As described in the environmental baseline (section III, part E), floodplain habitat along the Green River located in the vicinity of this project is some of the most important remaining nursery habitat utilized by Colorado pikeminnow and razorback sucker.

narrow with a smooth margin, 10 to 35 mm (0.4 to 1.4 inches) long and usually, less than 2 mm (0.1 inch) wide. The leaf blades are alternately arranged on the stem and, for the most part, are attached directly to the stem without a petiole. The flowers have petals that are pale lavender to whitish with prominent purple veins and measure 8 to 11 mm (0.3 to 0.4 inch) long and 3.5 to 4.5 mm (0.14 to 0.18 inch) wide. The entire flowers are about 1 cm (0.4 inch) across in full anthesis and are displayed in a raceme of 3 to 20 flowers at the end of the plant's leafy stems.

Life history and Population dynamics

Clay reed-mustard flowers are purple-veined, white, or lilac and are hairless. Blooming occurs from mid-April through mid-May (Franklin 1993, USFWS 1994). The clay reed-mustard reproduces sexually. Specific information on pollination mechanisms and vectors for the species is limited (USFWS 1994).

Status and Distribution

On January 14, 1992, *S. argillacea* was listed as threatened under the Endangered Species Act of 1973, as amended (ESA). Primary identified threats included oil and gas and oil shale development (57 FR 1398 1403).

The clay reed-mustard is endemic to clay soils derived from the zone of contact between the Uinta and Green River geologic formations, Uinta Basin, Uintah County, Utah. The clay reed-mustard typically grows on at-the-surface bedrock, scree, and fine-textured soils derived from the Evacuation Creek member of the Green River Formation. The species has also been documented below the rocky contact zone of the Uintah Formation and the Evacuation Creek Member. The species most commonly occurs on steep north-facing slopes, at elevations ranging from 4,721 to 5,790 feet (1,439 to 1,765 meters) (Franklin 1993). Clay reed-mustard is also associated with the mixed desert shrub community. Dominant shrub species associated with clay reed-mustard populations include Utah serviceberry, black sagebrush (*A. nova*), Castle Valley clover (*A. gardneri cuneata*), shadscale saltbush, and green rabbitbrush (*C. viscidiflorus*) (Franklin 1993, USFWS 1994).

There is no designated critical habitat for clay reed-mustard.

B. Shrubby Reed-Mustard

Species Description

Glaucocarpum suffrutescens was first discovered in 1935 by Edward Graham and described by Reed Rollins as *Thelypodium suffrutescens* (Graham 1937; 52 FR 37416, October 6, 1987). In 1937, Dr. Rollins then renamed this species to *Glaucocarpum suffrutescens* (Rollins 1938; 52 FR 37416, October 6, 1987). *Glaucocarpum (=Schoenocrambe) suffrutescens* was listed as an endangered species under the authority of the Endangered Species Act of 1973, as amended, on October 6, 1987 (52 FR 37416, October 6, 1987) under the name of toad-flax cress. In 1985, Welsh and Chatterley renamed this species to *Schoenocrambe suffrutescens*. The name was changed from toad-flax cress to shrubby reed-mustard, and the genus was changed from *Glaucocarpum* to *Schoenocrambe* on January 14, 1992 (57 FR 1398). Although other name

changes have been proposed, the Service still recognizes shrubby reed-mustard as *Glaucocarpum suffrutescens*.

The shrubby reed-mustard (*Glaucocarpum suffrutescens*) is a perennial herb in the mustard family (Brassicaceae). The clumped stems are 10 to 25 cm (4 to 12 inches) tall arising from a branching woody root crown. The leaves are entire with a smooth margin, 1.0 to 2.5 cm (0.4 to 1 inch) long and 0.3 to 1.0 cm (0.12 to 0.4 inch) wide. The leaf blades are alternately arranged on the stem and are attached to the stem by a short petiole. The shrubby reed-mustard flowers have petals that are light yellow or greenish yellow and spatulately shaped measuring about 10 mm (0.4 inch) long and 3 mm (0.12 inch) wide. The entire flowers are displayed in a raceme of, commonly, 5 to 20 flowers at the end of the plant's leafy stems (Rollins 1938; Welsh and Chatterley 1985; Welsh *et al.* 1987).

Shrubby reed-mustard occurs along semi-barren, white-shale layers of the Evacuation Creek member of the Green River Formation in the Uinta Basin of eastern Utah (52 FR 37416; Franklin 1995). The habitat of this plant is disjunct knolls and benches resembling small extremely dry desert islands surrounded by mixed desert shrub and pinyon-juniper woodland (52 FR 37416; Franklin 1995).

Life History and Population Dynamics

Flowering occurs from April to May and fruiting occurs May to June (USFWS 1994). Shrubby reed-mustard plants produce a few (four) to many (over one hundred) inflorescence each year. The five to twenty flowers on each inflorescence open acropetally (Trepedino and Bowlin n.d.; Service 1994). Flowers are fragrant in the mornings, but the fragrance declines throughout the day, and over the bloom time of each flower (3-5 days) (Tepedino and Bowlin n.d.; USFWS 1994).

Reproduction is sexual (USFWS 1994; Tepedino 2000). Pollinator exclusion experiments demonstrated that the shrubby reed-mustard is capable of automatic self-pollination (autogamy), but that significantly fewer seeds are set than when open pollination (assumed to be primarily cross-pollination) occurs (Tepedino and Bowlin n.d.; USFWS 1994; Tepedino 2000). The following prospective pollinators, all native bee species, were captured while foraging on the flowers: *Dialictus perdifficilis*, *D. sedi*, *Evylaeus pulveris* (all Halictidae), and *Andrena walleyi* (Andrenidae) (Tepedino and Bowlin n.d.; USFWS 1994; Tepedino 2000). These species are small to medium sized solitary bees (Bartlett et al. 2008; DiTerlizzi et al. 2008).

Status and Distribution

The factors which govern the distribution of shrubby reed-mustard are not well known, nor are the long-term population dynamics (USFWS 1994). The effect of natural factors, such as disease, parasitism, grazing by native species, natural erosion, and vegetative competition, on the viability of the species population is not known. From 1935 when the species was first discovered to 1987 when the species was listed, the population experienced a decline in population size and range. The reasons for the sharp decline are not well understood, but the practice of mining building stone within occupied habitat is thought to be a major contributor as is winter sheep grazing. The population is now known to occur in 7 populations. It is unknown

whether or not these populations have become genetically isolated or whether pollinators are able to travel between the populations to ensure genetic viability.

Over the past decade or so the population has fluctuated with the precipitation. During the driest years between 2000 and 2003, L. England (Service botanist) noticed difficulty in finding shrubby reed-mustard plants. In 2006, a wetter year, higher numbers of plants could be found (Buys and Associates 2006). Glisson (2005) noted that there was considerable variation in number of individuals from year to year. Many plants may exhibit prolonged dormancy (Menges 2002), and it is currently unknown if shrubby reed-mustard as long term demographic data have not been collected on this species.

Shrubby reed-mustard occurs in three meta-populations in Uintah and Duchesne Counties:

- Gray Knolls meta-population: centered in the Gray Knolls between the Green River and Hill Creek, Uinta County;
- Pack Mountain meta-population: centered on Little Pack Mountain and the slopes of Big Pack Mountain between Hill Creek and Willow Creek, Uinta County; and
- Badlands Cliff meta-population: the only meta-population occurring in Duchesne County; the meta-population occurs at the base of the Badlands cliff above the Wrinkles Road (USFWS 1994).

These three meta-populations contain 7 populations of the shrubby reed-mustard: Agency Draw, Big Pack Mountain, Johnson Draw, Thorn Ranch, Badlands Cliff, Dog Knoll, and Gray Knolls (Table 1). Figure 2 shows the geographic extent of the populations.

Table 1. Size of Known Shrubby Reed-Mustard Populations.

Meta-Population	Population	# of Individuals Counted	Source
Little / Big Pack Mountain	Agency Draw	28	Franklin 1995
		70	Shultz and Mutz 1979
		10	Glisson 2005
	Big Pack Mountain	1,670	Franklin 1995
		651[2]	Glisson 2004
		125[3]	Glisson 2005
		1,820	Buys and Associates 2006
	Johnson Draw	741	Franklin 1995
		708	Shultz and Mutz 1979
		156[4]	Glisson 2005
	Thorn Ranch	Type Locality	Graham 1935, Rollins 1937
Badlands Cliff	Badlands Cliff	170	England 1992
		3[5]	Glisson 2004
Gray Knolls	Dog Knoll	72	Franklin 1995
	Gray Knolls	248	Franklin 1995
Total # of Individuals Counted[6]		**2,929**	

[2] Glisson (2004) surveyed T11S R20E Sections 29, 32, and 33 of population; comprehensive survey on lower level of habitat area revealed 632 plants and partial survey mid-slope found 19 additional plants (651 total plants).
[3] Glisson (2005) surveyed small polygon within T11S R20E Section 29 of population; 125 plants found.
[4] Glisson (2005) partially surveyed 5 element occurrences documented by Franklin (1995). Franklin (1995) documented 9 element occurrences with 4 of them having 0 individuals. Glisson only revisited one of the populations originally marked with 0 individuals and also found 0.
[5] Glisson (2004) partially surveyed population.
[6] The number was derived solely from Franklin's 1995 survey as that was the most comprehensive survey for the entire species.

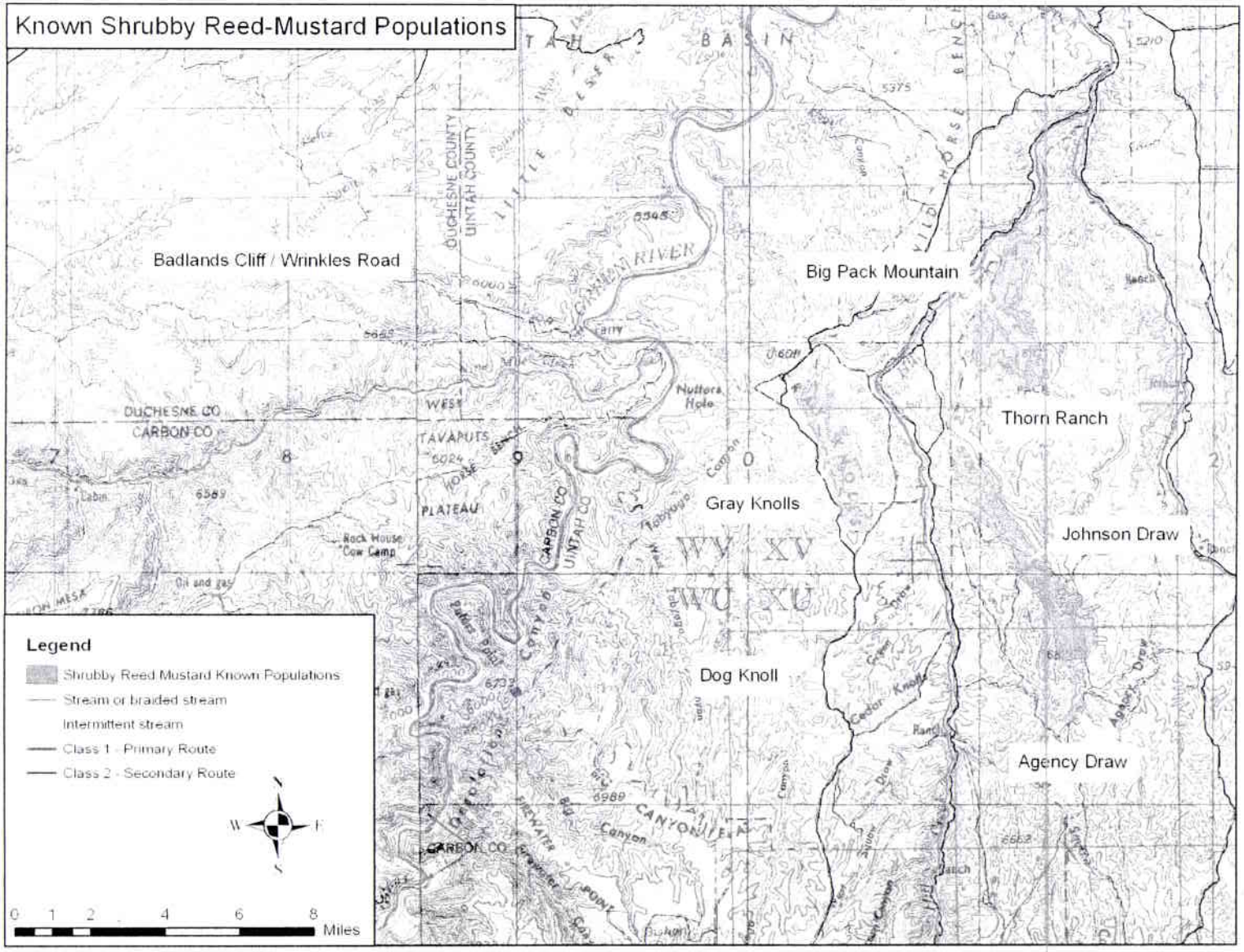

Figure 2. Known Shrubby Reed-Mustard Populations.

Based in part on Shultz and Mutz's (1979) and Franklin's (1995) surveys, the Service estimated that the Gray Knolls meta-population contained about 1,000 plants, the Pack Mountain meta-population was estimated to contain about 3,000 plants, and the Badlands Cliff meta-population was estimated to contain roughly 1,000 scattered plants (USFWS 1994). The Thorn Ranch population was the type locality for the species located in 1935 by Graham and in 1937 by Rollins in T11S R20E Section 25. The population was relocated in the early 1990's (L. England Field Observations). There have been no recent surveys for the species in this area.

The occurrence of the single Badlands Cliff population in Duchesne County sparked interest in surveying for additional populations along Wrinkles Road. Surveys were conducted from Sand Wash to Gate Canyon and only the one population (the Badlands Cliff population) was found (Franklin 1995).

As part of a Challenge Cost Share Grant (Glisson 2004; Glisson 2005), element occurrences reported by Franklin (1995) were revisited to determine occupancy. During this review, portions of the Big Pack Mountain population were resurveyed. The results reported by Glisson (2004; 2005) are recorded in Table 1. In addition to resurveying the element occurrences, Glisson (2005) surveyed three small outcrops of suitable habitat for two consecutive years. For two of these outcrops, the number of individuals counted from the first year to the second year was reduced to about half (site 1 showed 15 individuals the first year and 7 individuals the second year; site 3 showed 11 individuals the first year and only 6 individuals the second year). The last outcrop didn't show any individuals either year (Glisson 2005). The change in habitat occupancy and numbers between years indicates that seemingly unoccupied habitat is likely important for the long-term population dynamics of the Big Pack Mountain population because the population distribution may shift over time (Glisson 2005).

In 2006, Buys and Associates conducted a block survey within occupied habitat of the Big Pack Mountain population. They surveyed 1,389 acres and found approximately 1,820 plants within 26 acres of occupied habitat. In 2007, Buys and Associates surveyed for suitable habitat within the Big Pack Mountain population, the Thorn Ranch population, and the areas in between these two populations. They identified 1,680 acres of suitable habitat.

Land ownership of the shrubby reed mustard habitat is predominantly BLM (approximately 62%). The Uintah and Ouray Indian Reservation (UOIR) owns approximately 21% of the species known habitat. The remaining 17 percent of the known species habitat is split between private and State School and Institutional Trust Lands Administration (SITLA) lands. Information regarding the land ownership for each of the 7 populations is presented in table 2.

Table 2. Percent of Known Range per Land Ownership.

Meta-Population	Population	BLM	UOIR	Private	SITLA	Total % per Population
Little / Big Pack Mountain	Agency Draw	0.80	0.00	0.04	0.06	**0.90**
	Big Pack Mountain	23.19	0.85	0.00	1.15	**25.19**
	Johnson Draw	17.91	0.00	10.25	0.00	**28.16**
	Thorn Ranch	13.32	0.88	0.20	4.82	**19.22**
Badlands Cliff	Badlands Cliff	5.69	0.00	0.00	0.00	**5.69**
Gray Knolls	Dog Knoll	0.00	1.72	0.00	0.00	**1.72**
	Gray Knolls	1.13	17.62	0.00	0.36	**19.12**
Total % per Land Owner		**62.04**	**21.08**	**10.49**	**6.39**	**100.00**

Threats to the species include oil and gas development, winter sheep grazing, off-road vehicle use, and land management practices (52 FR 37416; USFWS 1994; Franklin 1995). At the time of listing in 1987, building stone collection was thought to have significantly altered the habitat of the species and decreased its range and population (52 FR 37416). The species habitat is also underlain by oil-shale deposits that have been identified as the most geologically prospective oil shale resources (BLM 2008). These threats combined are likely to endanger the continued existence of this species (52 FR 37416; USFWS 1994).

There is no designated critical habitat for shrubby reed-mustard.

C. Uinta Basin Hookless Cactus and Pariette Cactus

Sclerocactus glaucus (Uinta Basin hookless cactus) is a member of the small cactus genus *Sclerocactus*. Specimens of this species from the Grand Valley of Colorado were initially described as *Echinocactus glaucus* in 1898 by Karl Schumann. Several other specimens of this species, all from Colorado's Grand Valley were subsequently described in the scientific literature: *Echinocactus subglaucus* (Rydberg in 1917), *Sclerocactus whipplei* var. *glaucus* (Purpus in 1925) and *Sclerocactus franklinii* (Evans in 1939).

In the 1930's Edward Graham collected "*Sclerocactus whipplei*" and "*Utahia sileri*" specimens in Utah's Uinta Basin. These along with the Colorado plants were included by Lyman Benson in his 1966 monograph on the genus *Sclerocactus*, as *Sclerocactus glaucus*. The US Fish and Wildlife Service followed this taxonomic treatment when we listed the Uinta Basin hookless cactus (*S. glaucus*) as a threatened species in 1979 (44 FR 58870).

Taxonomic changes continued after *Sclerocactus glaucus*' listing in 1979. Of importance is Fritz Hochstätter's description and publication of *Sclerocactus wetlandicus* in1989. He describes this species as being found in northeast Utah in habitat around the Pariette Wetlands. In 1993, he recognized a variety, which he named *ilseae*. He describes this variety as maintaining a relatively small form with extremely short spination. Also recognizing a distinctive entity in the

Pariette Draw, Kenneth D. Heil and J. Mark Porter published *Sclerocactus brevispinus* in 1994. *S. brevispinus* is distinctive, due largely to its globose stems, short spines, and small flowers.

Taxonomic separation of the Sclerocactus species is reinforced by chloroplast DNA studies (Porter et. al 2000, 2007). The newly published Flora of North America (2004) also recognizes fifteen species in the genus *Sclerocactus*, including: *S. glaucus* (K.Shum.) L. Benson, *S. brevispinus* K.D. Heil & J.M. Porter, and *S. wetlandicus* F. Hochstätter.

On February 28, 1996 (61 FR 7596), the Fish and Wildlife Service (Service) presented an updated list of plant and animal taxa native to the United States that are regarded as candidates for possible addition to the List of Endangered and Threatened Wildlife and Plants under the Endangered Species Act of 1973, as amended (Act). *Sclerocactus brevispinus* was within this list. A retraction of *S. brevispinus* as a candidate occurred in September 1997 (62 FR 49401) with the following justification:

> "Because *S. brevispinus* was a part of *S. glaucus* when the latter species was listed as threatened, those plants now referred to as *S. brevispinus* are still considered to be listed as threatened. Therefore, including *S. brevispinus* as a candidate in the 1996 notice of review was inappropriate and unnecessary. To address the recent change in taxonomy, a proposed rule to add *S. brevispinus* to the List of Endangered and Threatened Plants will be published in the Federal Register at a later time."

Subsequently we received a petition to list *S. brevispinus* as an endangered species independent of *S. glaucus*. We published a finding on that petition on September 18, 2007 (72 FR 53211) that the petition is warranted and, in addition, we proposed name changes in the Federal List of Endangered and Threatened Plant Species (50 CFR, part 17, subchapter B of Chapter I) by adding *Sclerocactus brevispinus* and *Sclerocactus wetlandicus* under FLOWERING PLANTS. We consider all three species (*S. glaucus*, *S. brevispinus* and *S. wetlandicus*) to be threatened under the Act. *Sclerocactus brevispinus* and *S. wetlandicus* occur in northeastern Utah.

Sclerocactus wetlandicus

Sclerocactus wetlandicus is a photosynthesizing green plant with succulent unbranched stems usually 3 to 9 cm diameter and 4 to 12 cm tall varying from spheric to elongated cylindrical in shape. The succulent stem has 12 to 14 ribs spirally aligned on the plant body with tubercles bearing spines. Spines are borne in clusters on areoles at the apex of the rib tubercles. The spines are of three types: 6 to 10 strait radial spines 6 to 20 mm long are borne at the margin of areole, 3 to 4 central strait spines similar to radial spines but borne in central portion of the areole around the, usually large single (sometimes 2 or lacking) abaxial spine 15 to 29 mm long and thicker than the other spines the abaxial spine is strait or gently curved (very rarely hooked). (Hooked abaxial spines are the norm in all Sclerocactus species except *S. glaucus* and *S. wetlandicus*). *Sclerocactus wetlandicus* flowers are funnelform 2 to 4 cm wide and 2.5 to 5 cm high. The sepals and petals collectively are called tepals in cacti. The outer tepals are oblanceolate about 15 mm wide and 20 to 50 mm long with broad brownish lavender midstripe and pink to violet margins. The inner tepals are oblanceolate to lanceolate 17 to 25 mm wide and 30 to 60 mm long pink or violet. The stigma has 6 lobes and it and the style is pinkish

yellow. Filaments are green to white and anthers are yellow. The Fruit is ovoid to barrel shaped reddish or reddish grey when ripe 7 to 12 mm wide and 9 to 25 mm long. Seeds are black 1.5 mm wide 2.5 mm long (Hochstatter 1993).

In Utah, Uinta Basin hookless cactus populations are found in salt desert scrub communities, on sandy loam to clay loam soils derived from Green River, Uinta, and Duchesne River formations, often covered with cobbles and pebbles from tertiary or quaternary alluvium and/or course surface rock at the base of mesa and hill slopes.

According to the Resource Management Plan of the Utah Bureau of Land Management (BLM) Vernal Field Office (VFO)(2008) and the Uinta Basin cactus recovery Plan (USFWS 1990a), the core area of the population occupies approximately 25,000 acres. This core population area occurs on benches and mesa slopes above the floodplain of the Green River from the Ouray National Refuge to the confluence of Nine Mile Creek; approximately 10 miles upstream along the White River from the confluence of the Green River; and approximately 10 miles upstream along the Duchesne River from the confluence of the Green River. Small outlier populations of *S. wetlandicus* occur in the lower elevations of the Uinta Basin. The population near the Bonanza power plant extending to the southeast corner of the Antelope Draw allotment is one of the most significant of these outlier populations. This population occurs on the tops and slopes of low mesas covered with a veneer of relictual cobble/gravelly river terrace deposits of Pleistocene or earlier age. This population is 10 to 20 miles from the species large core population near the Green and White Rivers.

Sclerocactus brevispinus

Sclerocactus brevispinus is a photosynthesizing green plant with succulent unbranched stems usually 1.8 to 7 cm diameter and 2.5 to 8 cm tall varying from depressed spheric to shortened cylindrical in shape. The succulent stem has about 13 ribs spirally aligned on the plant body with tubercles bearing spines. Spines are borne in clusters on areoles at the apex of the rib tubercles. The spines are of three types: 6 to 7 strait radial spines 5 to 15 mm long are borne at the margin of areole, 0 to 2 lateral strait central spines similar to radial spines but borne in central portion of the areole around the usually small single (sometimes lacking) abaxial spine 1 to 5 mm long and thicker than the other spines the abaxial spine is hooked (in specimens with 1 to 2 mm central long spines the spine hook reflexes back to the surface of the areole) are shorter. Flowers campanulate 1.1 to 3 cm wide and 2 to 3 cm high. The outer tepals are oblanceolate about 6 mm wide and 15 mm long with broad brownish midstripe and pink to purple margins. The inner tepals are oblanceolate to lanceolate 10 to 22 mm wide and 30 to 60 mm long purple. The stigma has 6 lobes and it and the style is pinkish yellow. Filaments are white to green to pinkish purple and anthers are yellow. The Fruit is shortened barrel shaped reddish or reddish grey when ripe 7 to 12 mm wide and 9 to 25 mm long. Seeds are black 1.8 to 2.7 mm wide 2.5 to 3.8 mm long. (Species descriptions adapted from Hochstatter 1993).

Sclerocactus brevispinus habitat is a sparsely vegetated desert shrubland dominated by *Atriplex*, *Chrysothamnus*, and *Tetradymia* species (USFWS 1990a, 2007). The species' life history is poorly known, but it is thought to be a long-lived perennial usually flowering after 3 or 4 years.

A broad assemblage of native bees, and possibly other insects including ants and beetles, pollinates *S. brevispinus* (USFWS 1990a, 2007).

Sclerocactus brevispinus grows on fine soils in clay badlands derived from the Wagon hound member of the Uinta formation (USFWS 1990a). The species is restricted to one population in an area about 16 kilometers (km) (10 miles (mi)) long by 8 km (5 mi) wide astride the Duchesne–Uintah County boundary on Bureau of Land Management (BLM), Ute Tribe, State of Utah, and private land. We estimate the total species population to be about 11,000 individuals on approximately 7,200 hectares (ha) (18,000 acres (ac)), distributed largely across BLM and Ute Tribal lands (O'Hearn, personal communication, USFWS 2007).

The total population of *Sclerocactus brevispinus* on the Uintah and Ouray Reservation of the Ute Tribe, directly north and adjacent to BLM lands, is unknown. The Ute Tribe conducted an inventory in 2007, and preliminary results indicate a population of 5806 individuals in the area of proposed oil and gas drilling within the Pariette Draw drainage (O'Hearn, personal communication). We estimate the total area of potential habitat for S. brevispinus on Ute Tribal lands, based on exposures of the Wagon Hound member with desert shrub vegetation, to be about 1,200 ha (3,000 ac) (USFWS 2007).

There is no designated critical habitat for either *Sclerocactus brevispinus* or *S. wetlandicus.*

D. Ute ladies'-tresses

Species Description

The Ute ladies'-tresses (*Spiranthes diluvialis)* was first described as a species in 1984 by Dr. Charles J. Sheviak from a population discovered near Golden, Colorado (Sheviak 1984). The Ute ladies'-tresses are perennial orchids from the family Orchidaceae. The orchid first appears above ground as a rosette of thickened grass-like leaves that is very difficult to distinguish from other vegetation. Its leaves are up to 1.5 cm wide and 28 cm long; the longest leaves are near the base. The usually solitary flowering stem is 20 to 50 cm tall, terminating in a spike of 3 to 15 white or ivory flowers. The range in elevation of known orchid populations in Utah is from 1,300 to 2,100 meters (USFWS 2003). In Utah, Ute ladies'-tresses are known to occur predominantly in the northern and northeastern portions of the state. The orchid also occurs in three scattered locations in the western and southern portions of the state (USFWS 2003).

Orchid habitats must consist of sufficient hydrology to keep soils moist at the surface throughout the growing season. Soils are generally silty-loam often underlain with cobble and gravel. The habitat settings are early to mid-successional riparian habitats (i.e. well established soils and vegetation) along perennial streams and rivers such as moist stream edges, high flow channels, old oxbows, vegetated point bars, and other fluvial features (USFWS 1992; Fertig et. al. 1994; USFWS 1995; Fertig 2000). The orchid may also occur in settings that mimic one of the above habitats, such as moist borrow pits, roadside ditches, reservoir edges, and berms (Ward and Naumann 1998).

Perennial graminoids and forbs and low vegetative cover dominate habitats occupied by Ute ladies'-tresses. A few populations in eastern Utah and Colorado are found in riparian

woodlands, but generally the species seems intolerant of shade, preferring open, grass, sedge, and forb-dominated sites. Where colonies occur in more wooded areas, plants are usually found on the edges of small openings and along trails (Ward and Naumann 1998). The orchid is intolerant of crowding and competition. The orchid may persist for some time in the grassy understory of woody riparian shrublands, but does not appear to thrive under these conditions (Ward and Naumann 1998).

Ute ladies'-tresses in Utah seem to have persisted regardless of the activities and influences of humans (USFWS 2003). In some cases, the orchid's habitat has apparently shifted to new locations and the species has thrived as a result of modified hydrologic regimes. Irrigation and grazing have also created and maintained suitable habitat conditions where they did not previously exist.

Life History and Population Dynamics

Flowering of Ute ladies'-tresses generally occurs from mid-July through August, at which point location, identification, and population size estimates are typically determined. However, in some locations the plant may bloom in early July or may still be in flower as late as early October. Some individuals remain underground or do not flower each year (Arft 1995; Riedel 1992).

Because of the unique anatomy of orchid flowers, only certain insects can accomplish pollination. Reproduction of the orchid is strictly sexual, with bumblebees (*Bombus* spp.) and anthophorans (*Anthophora* spp.) (Sipes and Tepedino 1995; Sipes et. al. 1995) as the primary pollinators. These insects visit the orchids for the nectar and pollination is accomplished incidentally. The number of seeds of the orchid varies greatly between plants. Each orchid fruit can have several hundred or up to 10,000 seeds but generally average around 2,000 (Sipes and Tepedino 1995). These seeds may be dispersed by water or wind (Wells 1981).

Status and Distribution

Ute ladies'-tresses were federally listed as threatened on January 17, 1992 (57 FR 2048) throughout its entire range. No critical habitat has been designated for the species. To date, no recovery plan has been approved for this species. However, a draft recovery plan has been written (USFWS 1995).

Populations of orchids are known from three broad general areas of the interior western United States: near the base of the eastern slope of the Rocky Mountains in southeastern Wyoming and adjacent Nebraska and north-central and central Colorado; in the Upper Colorado River Basin, particularly in the Uinta Basin; and in the Bonneville Basin along the Wasatch Front and westward in the eastern Great Basin, in north-central and western Utah, extreme eastern Nevada, and southeastern Idaho, and central Washington.

At the time of its listing, the total known population size of Ute ladies'-tresses was fewer than 6,000 individuals from 11 populations occurring in Colorado, Utah, and Nevada (57 FR 2048). Several populations on the Wasatch Front, Utah; Great Basin, Utah and Nevada; and the Front Range of Colorado were believed to be extirpated due to activities associated with frontier

settlement (urbanization, clearing land for agriculture, water diversion, etc.). Most known populations contained fewer than 1,000 plants when counted in 1990 and 1991. Eastern Utah populations were typically small in size. Since 1993, *S. diluvialis* has been discovered in southeastern Wyoming, southwestern Montana, western Nebraska, southern Idaho, and central Washington (Fertig et al. 2005). Populations are now known to occur in 38 watersheds at elevations ranging from 220 to 558 m (720 to 1,830 ft) in Washington to 2,134 m (7,000 ft) in northern Utah (Fertig et al. 2005). Recovery driven inventory efforts indicate that the number of existing and historical populations is 61, of which 53 are considered extant. Of all extant populations, 60 percent contain over 100 plants and 21 percent have greater than 1,000 individuals.

Population numbers, based on counts of flowering individuals, fluctuate greatly ranging from 23% to 79% (Ward and Naumann 1998). This is because a varying proportion of the population may either be dormant underground or in a vegetative (non-flowering) state thus, not easily discerned during population monitoring. Therefore, the number of flowering adults does not give an accurate population size or structure. Monitoring of both flowering and vegetative plants by Arft (1995) indicated that population size may be fairly stable even though the number of flowering individuals demonstrates high variability. The life span of individuals is unknown, but plants studied over a nine year period were used to estimate a life expectancy of more than 50 years (USFWS 1995).

E. Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub

For information regarding the species/critical habitat description, life history, population dynamics, and status and distribution, please see the species specific recovery plans and recovery goals:

- Colorado pikeminnow:
  - U.S. Fish and Wildlife Service. 1991. Colorado Squawfish Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado.
  - U.S. Fish and Wildlife Service. 2002a. "Pikeminnow (*Ptychocheilus lucius*) Recovery Goals: Amendment and Supplement to the Pikeminnow Recovery Plan," U.S. Fish and Wildlife Service, Mountain Prairie Region 6, Denver, Colorado.
- Razorback sucker:
  - U.S. Fish and Wildlife Service. 1997. Razorback sucker *Xyrauchen texanus* recovery plan. Denver, Colorado.
  - U.S. Fish and Wildlife Service. 2002d. "Razorback sucker (*Xyrauchen texanus*) Recovery Goals: Amendment and Supplement to the Razorback Sucker Recovery Plan," U.S. Fish and Wildlife Service, Mountain Prairie Region 6, Denver, Colorado.
- Humpback chub:
  - U.S. Fish and Wildlife Service. 1990c. Humpback Chub Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado. 43 pp.
  - U.S. Fish and Wildlife Service. 2002b. "Humpback chub (*Gila cypha*) Recovery Goals: Amendment and Supplement to the Humpback Chub Recovery Plan," U.S. Fish and Wildlife Service, Mountain Prairie Region 6, Denver, Colorado.

- Bonytail:
    - U.S. Fish and Wildlife Service. 1990d. Bonytail Chub Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado. 35 pp.
    - U.S. Fish and Wildlife Service. 2002c. "Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan." U.S. Fish and Wildlife Service, Mountain Prairie Region 6, Denver, Colorado.

For information regarding the designated critical habitat and the primary constituent elements, please refer to Federal Register 59(54): 13374-13400 (USFWS 1994a).

III. Environmental Baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

The action area is defined at 50 CFR 402 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". The action area also depends on the species being discussed. For the purposes of this consultation, the Service defines the action area to include the area of influence.

A. Clay Reed-Mustard

Status of the Species within the Action Area

Suitable and occupied habitat for the clay reed-mustard occurs within the following seven grazing allotments covered under the proposed action: Green River AMP, Green River Bottoms, Hatchbroome Bartholomew, Little Desert, Sand Wash, Thorne-Ute-Broome, and Oil Shale. The clay reed-mustard is narrowly distributed and has extremely low population numbers within its range.

The species has been documented as occurring along the Green River corridor on steep slopes within and adjacent to the Green River AMP, Green River Bottoms, and Little Desert grazing allotments. In addition, approximately 10 miles to the east, suitable habitat for the clay reed-mustard occurs on the steep slopes and canyons located along Willow Creek and within mixed desert shrub communities located between Willow and Hill Creeks. The species has been documented in this area within the Hatchbroome Bartholomew, Sand Wash, and Thorne-Ute-Broome allotments. Suitable habitat occurs within the northern section of the Oil Shale allotment. The exact population size and distribution of clay reed-mustard within these allotments is not currently known.

Factors Affecting Species Environment within the Action Area

Trampling from off-road vehicles and livestock are active and potential threats (USFWS 1994b). Sheep and cattle grazing may have had an impact on clay reed-mustard historically. Domestic

livestock grazing, with current levels of grazing intensity and grazing management by the BLM, is not expected to significantly impact this species on BLM managed lands (USFWS 1994b).

Oil and gas exploration, drilling, and production, oil-shale mining and processing, building stone removal and off-road vehicle use are past, existing and potential threats to the habitat of clay reed-mustard. All known populations of clay reed-mustard occur on Federal lands that are leased as oil and gas energy reserves. In addition, the entire range of the species is underlain by oil shale, which may be mined when economic conditions favor it. The species is vulnerable to surface disturbing activities associated with energy development within suitable habitat (USFWS 1990b). The habitat is underlain by petroleum deposits; similar deposits are currently being developed in locations adjacent to known occupied habitat. The potential for extensive loss and fragmentation of clay reed-mustard populations from petroleum resource development operations is a significant potential threat (USFWS 1994b).

B. Shrubby Reed-Mustard

Status of the Species within the Action Area

Potential habitat for the shrubby reed-mustard and five populations exist within or adjacent to five of the grazing allotments covered under the proposed action:

- The Thorn Ranch shrubby-reed mustard population occurs almost entirely within the Oil Shale, Sand Wash, Hatchbroome Bartholomew, and Thorne-Ute-Broome allotments. The Thorn Ranch population was designated based on a type locality from 1935 in T11S R20E Section 25. The population was relocated in the early 1990's (L. England Field Observations). There have been no recent surveys for the species in this population.
- The largest population of shrubby reed-mustard, the Big Pack Mountain population, occurs immediately to the north of the Oil Shale allotment, mainly in T11S R20E Sections 8, 9, 16, 17, 19-21, 28-30, and 31-33. The number of individuals counted in 1992 was 1,670 (UNHP 2003). Glisson (2004, 2005) surveyed the southern portions of the Big Pack Mountain population in 2004 and 2005 and counted 651 and 125 plants, respectively. The survey conducted in 2005 was within a small polygon of habitat and is not directly comparable to the 2004 data.
- The Johnson Draw and Agency Draw shrubby reed-mustard populations occur entirely within the Oil Shale allotment. The total number of individuals counted within these populations in 1995 was 769 (Franklin 1995).
- The Badlands Cliff/Wrinkles Road shrubby reed-mustard population occurs entirely within the Devils Canyon allotment.

The Big Pack Mountain and Johnson Draw populations are thought to represent a large portion of the species' habitat (>40 percent) and high density of individuals (>80 percent). Population trends for the shrubby reed-mustard have been difficult to determine as long-term demographic data have not been collected. Survey data seems to indicate that populations fluctuate with precipitation, and there is considerable variation in the number of individuals counted from year to year.

Factors Affecting Species Environment within the Action Area

Trampling from off-road vehicles and livestock are active and potential threats (USFWS 1994b). Sheep and cattle grazing may have had an impact on shrubby reed-mustard historically. Domestic livestock grazing, with current levels of grazing intensity and grazing management by the BLM, is not expected to significantly impact this species on BLM managed lands (USFWS 1994b).

Oil and gas exploration, drilling, and production, oil-shale mining and processing, building stone removal and off-road vehicle use are past, existing and potential threats to the habitat of shrubby reed-mustard. All known populations of shrubby reed-mustard occur on Federal lands that are leased as oil and gas energy reserves. In addition, the entire range of the species is underlain by oil shale, which may be mined when economic conditions favor it. The species is vulnerable to surface disturbing activities associated with energy development within suitable habitat (USFWS 1990b). The habitat is underlain by petroleum deposits; similar deposits are currently being developed in locations adjacent to known occupied habitat. The potential for extensive loss and fragmentation of shrubby reed-mustard populations from petroleum resource development operations is a significant potential threat (USFWS 1994b).

Shrubby reed-mustard habitat is also associated with commercially valuable native building stone composed of clasts of volcanic ash deposited in the prehistoric Uinta Lake during the Eocene epic. Previous commercial stone excavation has apparently caused the extirpation of a portion of the species population in the vicinity of Big and Little Pack Mountains. The most vigorous of this species' remaining populations are from areas that have not had the building stone removed (USFWS 1994b).

C. Uinta Basin Hookless Cactus and Pariette Cactus

Status of the Species within the Action Area

Sclerocactus wetlandicus

Populations of this species found within the action area occur on benches and mesa slopes above the floodplain of the Green River from the Ouray National Refuge to the confluence of Nine Mile Creek and approximately 10 miles upstream along the White River from the confluence of the Green River. Small outlier populations of *S. wetlandicus* occur in the lower elevations of the Uinta Basin and are also potentially impacted by the proposed action. The species or potential habitat is known to be present within the Birchell, Bohemian Bottoms, Bull Canyon, Devils Canyon, Eight Mile Flat, Green River AMP, Green River Bottoms, Little Desert, Max Canyon, Oil Shale, Olsen AMP, Sand Wash, Seven Sisters, and Wetlands grazing allotments covered under the proposed action. The exact population size and distribution of *S. wetlandicus* within these allotments is not currently known.

Sclerocactus brevispinus

Potential and occupied habitat for the species occurs along the Pariette Draw adjacent to the Duschesne-Uinta County border. The species or potential habitat is known to be present within

the Castle Peak, Eight Mile Flat, and Wetlands grazing allotments covered under the proposed action. The exact population size and distribution of *S. brevispinus* within these allotments is not currently known.

Factors Affecting Species Environment within the Action Area

The programmatic BO (USFWS 2008) for the Resource Management Plan of the Utah Bureau of Land Management Vernal Field Office (Vernal RMP) concludes that activities with the greatest potential to adversely affect cactus populations and habitats include: livestock grazing (trampling); off-highway vehicle use; energy and mineral exploration and development; stone collecting; the use of insecticides and herbicides; and illegal collection. In addition to these human-induced threats, several natural threats to the continued conservation of the species include: disease, parasitism, predation, drought, erosion, trampling by wildlife, and vegetative competition (Service 1990a, 2007). These factors also affect the species in the action area.

The total amount of past and the more recent surface disturbance in the project area and cactus habitat can not be fully quantified but probably results from past livestock trampling, old roads, oil and gas development, and mining activity in the area.

D. Ute ladies'-tresses

Status of the Species within the Action Area

This species is presently found immediately adjacent to the action area along the southern border of Dinosaur National Monument (Uintah County). The species occurs here along small tributaries to the Green River within Hog Canyon, Cub Creek, and Orchid Draw. A small section of the Cub Creek drainage runs through the northern portion of the Green River grazing allotment. Within the Cub Creek drainage, the species is known only to occur within Hog Canyon and a few small side canyon washes further upstream from Hog Canyon along Cub Creek. There are no known plants located within the Green River grazing allotment.

Factors Affecting Species Environment within the Action Area

Factors that could affect the orchid include natural or human-directed disturbances, such as the modification of hydrology, increased recreation use, introduction or proliferation of invasive species, improper herbicide use, reduction or loss of pollinators, and improper season and stocking rate of livestock grazing (USFWS 1995).

E. Colorado Pikeminnow

Status of the Species within the Action Area

Colorado pikeminnow occur in three populations: Green River Subbasin (Nesler 2000; USFWS 2002a); Upper Colorado River Subbasin (Nesler 2000; Osmundson 2002); and San Juan River Subbasin (Holden 1999; USFWS 2002a). The Green River Subbasin is the only population that is likely to be affected by the proposed action.

A recent report on the status of Colorado pikeminnow in the Green River subbasin (Bestgen *et al.* 2005) presented population estimates for adult (>450 mm total length (TL)) and recruit-sized (400–449 mm TL) Colorado pikeminnow. The report suggests that over the study period (2001 to 2003) there was a decline in abundance of Colorado pikeminnow in the Green River subbasin from 3,338 (95 percent confidence interval, 2815 to 3861) animals in 2001 to 2,324 (95 percent confidence interval 1395 to 3252) animals in 2003.

Currently, two primary reaches of Colorado pikeminnow nursery habitat are present in the Green River system. The upper one occurs from near Jensen, Utah, downstream to the Duchesne River confluence. The lower one occurs from near Green River, Utah, downstream to the Colorado River confluence (Tyus and Haines 1991; McAda *et al.* 1994a; McAda *et al.* 1994b; McAda *et al.* 1997). Larvae from the lower Yampa River are thought to mostly colonize backwaters in alluvial valley reaches between Jensen, Utah, and the Ouray National Wildlife Refuge. Most floodplain habitat along the current-day Green River is concentrated in this reach. Although the density of age-0 fish in autumn was usually higher in the lower than in the middle Green River (Tyus and Haines 1991; McAda *et al.* 1994a), differences in habitat quantity may have confounded abundance estimates. These backwaters are especially important during the Colorado pikeminnow's critical first year of life.

This species is found in the action area within portions of the Green and White Rivers. Grazing allotments covered under the proposed action that may contain this species or its habitat include the White River, Watson, Southam canyon, Asphalt Draw, Olsen AMP, Seven Sisters, Hells Hole, Horseshoe Bend, Twelve Mile, Green River AMP, Wetlands, Green River Bottoms, Bohemian Bottoms, Stirrup, Baeser Wash, West Deadman, Walker Hollow, Kane Hollow, Jensen, Green River, and Little Desert allotments.

Factors Affecting Species Environment within the Action Area

Major declines in Colorado pikeminnow populations occurred during the dam-building era of the 1930s through the 1960s (Behnke and Benson 1983). Current threats to Colorado pikeminnow in the project area are construction/operation of dams, stream flow regulation and habitat modification; competition with and predation by nonnative fishes; and pesticides and pollutants (Behnke and Benson 1983; USFWS 2002a). The existing habitat, altered by these threats, has been modified to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering.

The Bureau of Land Management has made assessments of the riparian-wetland areas within all of the grazing allotments addressed under the proposed action. It has been determined that the wetland-riparian areas are meeting or are making progress towards meeting Proper Functioning Condition. If future monitoring indicates non-conformance with BLM standards, the permit may be modified and reissued with Terms and Conditions that will result in conformance (BLM 2009, page 6).

F. Razorback Sucker

Status of the Species within the Action Area

In Utah, the razorback sucker currently occupies parts of the Green River Subbasin (Green River, Yampa River, White River, and Duchesne River), the Upper Colorado River Subbasin (Upper Colorado River), and the San Juan River Subbasin (San Juan River) (USFWS 2002d; 54 FR 54967; 54 FR 13374). The Green River Subbasin is the only population that is likely to be affected by the proposed action.

Lanigan and Tyus (1989) used a demographically closed model with capture-recapture data collected from 1980 to 1988 and estimated that the middle Green River population consisted of about 1,000 adults (mean, 948; 95 percent confidence interval, 758–1,138). Based on a demographically open model and capture-recapture data collected from 1980 to 1992, Modde *et al.* (1996) estimated the number of adults in the middle Green River population at about 500 fish (mean, 524; 95 percent confidence interval, 351–696).

The Green River from the confluence with the Yampa River to Sand Wash has the largest existing riverine population of razorback sucker (Lanigan and Tyus 1989; Modde *et al.* 1996). Razorback suckers are permanent residents of the Green River below its confluence with the Yampa River and are reliant on in-channel habitat for spawning and flooded off-channel habitats for several aspects of their life history. In turn, these habitats are created and maintained by the natural hydrology and sediment transport provided by the Yampa River.

This species is found in the action area within portions of the Green and White Rivers. Grazing allotments covered under the proposed action that may contain this species or its habitat include the White River, Watson, Southam canyon, Asphalt Draw, Olsen AMP, Seven Sisters, Hells Hole, Horseshoe Bend, Twelve Mile, Green River AMP, Wetlands, Green River Bottoms, Bohemian Bottoms, Stirrup, Baeser Wash, West Deadman, Walker Hollow, Kane Hollow, Jensen, Green River, and Little Desert allotments.

Factors Affecting Species Environment within the Action Area

A marked decline in populations of razorback suckers can be attributed to construction of dams and reservoirs, introduction of nonnative fishes, and removal of large quantities of water from the Colorado River system. Dams on the mainstem Colorado River and its major tributaries have segmented the river system, blocked migration routes, and changed river habitat into lake habitat. Dams also have drastically altered flows, temperatures, and channel geomorphology. These changes have modified habitats in many areas so that they are no longer suitable for breeding, feeding, or sheltering. Major changes in species composition have occurred due to the introduction of numerous nonnative fishes, many of which have thrived due to human-induced changes to the natural riverine system. These nonnative fishes prey upon and compete with razorback suckers.

The primary threats to razorback sucker are stream flow regulation and habitat modification; competition with and predation by nonnative fishes; and pesticides and pollutants (USFWS

2002d). The existing habitat, altered by these threats, has been modified to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering.

The Bureau of Land Management has made assessments of the riparian-wetland areas within all of the grazing allotments addressed under the proposed action. It has been determined that the wetland-riparian areas are meeting or are making progress towards meeting Proper Functioning Condition. If future monitoring indicates non-conformance with BLM standards, the permit may be modified and reissued with Terms and Conditions that will result in conformance (BLM 2009, page 6).

G. Humpback Chub

Status of the Species within the Action Area

Six self-sustaining populations of humpback chub are known to exist, three of which are in Utah (Service 2002c):

- Westwater Canyon, Colorado River, Utah – 2,900-6,500
- Desolation/Gray Canyons, Green River, Utah -- 1,500
- Cataract Canyon, Colorado River, Utah – 500

Desolation/Gray Canyon is the only population that has the potential to be affected by the proposed action. The Utah Division of Wildlife Resources has monitored the fish community in Desolation and Gray Canyons since 1989 and has consistently reported captures of age-0, juvenile, and adult *Gila*, including humpback chub, indicating a reproducing population (Chart and Lentsch 1999).

This species is found in the action area within portions of the Green River. Grazing allotments covered under the proposed action that may contain this species or its habitat include the Green River AMP, Wetlands, Green River Bottoms, Twelve Mile, Horseshoe Bend, Bohemian Bottoms, Stirrup, Baeser Wash, West Deadman, Walker Hollow, Kane Hollow, Jensen, Green River, and Little Desert allotments.

Factors Affecting Species Environment within the Action Area

Although historic data are limited, an apparent range-wide decline in humpback chubs is likely due to a combination of factors including alteration of river habitats by reservoir inundation, changes in stream discharge and temperature, competition with and predation by introduced fish species, and other factors such as changes in food resources resulting from stream alterations (USFWS 1990c).

The primary threats to humpback chub are stream flow regulation and habitat modification; competition with and predation by nonnative fishes; parasitism; hybridization with other native *Gila* species; and pesticides and pollutants (USFWS 2002c). The existing habitat, altered by these threats, has been modified to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering.

Hybridization with roundtail chub (*Gila robusta*) and bonytail, where they occur with humpback chub, is also recognized as a threat to humpback chub. A larger proportion of roundtail chub have been found in Black Rocks and Westwater Canyon during low flow years (Kaeding *et al.* 1990; Chart and Lentsch 2000), which increase the chances for hybridization.

The Bureau of Land Management has made assessments of the riparian-wetland areas within all of the grazing allotments addressed under the proposed action. It has been determined that the wetland-riparian areas are meeting or are making progress towards meeting Proper Functioning Condition. If future monitoring indicates non-conformance with BLM standards, the permit may be modified and reissued with Terms and Conditions that will result in conformance (BLM 2009, page 6).

H. Bonytail

Status of the Species within the Action Area

Bonytail were once widespread in the large rivers of the Colorado River Basin (Cope and Yarrow 1875; Jordan 1891; Gilbert and Scofield 1898; Kirsch 1889; Chamberlain 1904). The species experienced a dramatic, but poorly documented, decline starting in about 1950, following construction and operation of mainstem dams, introduction of nonnative fishes, poor land-use practices, and degraded water quality (Miller 1961; Ono *et al.* 1983). A stocking program is being implemented to reestablish populations in the Upper Colorado River Basin. Between 1998 and 2003, the number of bonytail stocked in the Green River subbasin was 189,438 fish, with majority of the fish being juveniles at the time of stocking. However, Bonytail remain so rare that it is currently not possible to conduct population estimates.

This species is found in the action area within portions of the Green River. Grazing allotments covered under the proposed action that may contain this species or its habitat include the Green River AMP, Wetlands, Green River Bottoms, Twelve mile, Horseshoe Bend, Bohemian Bottoms, Stirrup, Baeser Wash, West Deadman, Walker Hollow, Kane Hollow, Jensen, Green River, and Little Desert allotments.

Factors Affecting Species Environment within the Action Area

The primary threats to bonytail are stream flow regulation and habitat modification; competition with and predation by nonnative fishes; hybridization with other native *Gila* species; and pesticides and pollutants (Service 2002d). The existing habitat, altered by these threats, has been modified to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering.

The Bureau of Land Management has made assessments of the riparian-wetland areas within all of the grazing allotments addressed under the proposed action. It has been determined that the wetland-riparian areas are meeting or are making progress towards meeting Proper Functioning Condition. If future monitoring indicates non-conformance with BLM standards, the permit may be modified and reissued with Terms and Conditions that will result in conformance (BLM 2009, page 6).

IV. Effects of the Proposed Action

Activities occurring under the livestock grazing program may increase and concentrate livestock presence; increase motorized traffic; and increase surface disturbance from fence and livestock pond construction in habitat containing listed plant species. These activities may increase the occurrence of trampling or crushing of individuals, increase soil disturbance, soil compaction and erosion; increase occurrence of exotic plant species; reduce pollinator populations and remove, modify or degrade suitable habitat. As a result, there may be increased occurrence of plant damage or individual mortality and loss of habitat (USFWS 2008).

A. Clay Reed-Mustard

Clay reed-mustard is typically found on steep shale slopes within the action area. Although livestock are not typically attracted to populations of the clay reed-mustard, the habitat is accessible to them. Direct removal or trampling of individuals could occur, as could the modification of suitable habitat from soil compaction and erosion and increased soil disturbance. Activities occurring under the proposed action may increase equipment and vehicle use, vegetation disturbance, and surface disturbance in clay reed-mustard habitat. These activities may result in vegetation disturbance, removal, and alteration.

The clay reed-mustard occurs within the Green River AMP, Green River Bottoms, Hatchbroome Bartholomew, Little Desert, Sand Wash, Thorne-Ute-Broome, and Oil Shale grazing allotments addressed in the proposed action. The rotational grazing strategy of the proposed action will prevent livestock from being in the same area at the same time two years in a row, will reduce the amount of time a herd spends in one area, and will prevent livestock from being in the species habitat during the critical growing season when the species is most vulnerable to the trampling effects of livestock trailing. However, the loss of individual plants resulting from livestock use is possible.

B. Shrubby Reed-Mustard

Shrubby reed-mustard is typically found on semi-barren white shale layers of level to moderately sloping grounds. Although livestock are not typically attracted to populations of the shrubby reed-mustard, the habitat is accessible to them. Direct removal or trampling of individuals could occur, as could the modification of suitable habitat from soil compaction and erosion and increased soil disturbance. Activities occurring under the proposed action may increase equipment and vehicle use, vegetation disturbance, and surface disturbance in shrubby reed-mustard habitat. These activities may result in vegetation disturbance, removal, and alteration.

The shrubby reed-mustard occurs within the Oil Shale, Sand Wash, Hatchbroome Bartholomew, Devils Canyon, and Thorne-Ute-Broome grazing allotments addressed in the proposed action. The rotational grazing strategy of the proposed action will prevent livestock from being in the same area at the same time two years in a row, will reduce the amount of time a herd spends in one area, and will prevent livestock from being in the species habitat during the critical growing season when the species is most vulnerable to the trampling effects of livestock trailing. However, the loss of individual plants resulting from livestock use is possible.

C. Uinta Basin Hookless Cactus and Pariette Cactus

The Uinta Basin hookless cactus or potential habitat occurs within the Birchell, Bohemian Bottoms, Bull Canyon, Devils Canyon, Eight Mile Flat, Green River AMP, Green River Bottoms, Little Desert, Max Canyon, Oil Shale, Olsen AMP, Sand Wash, Seven Sisters, and Wetlands grazing allotments addressed in the proposed action. The Pariette cactus or potential habitat occurs within the Castle Peak, Eight Mile Flat, and Wetlands grazing allotments addressed in the proposed action. Within these allotments, these species occur in open areas accessible to livestock grazing. Trampling from livestock is likely to occur but, due to a lack of monitoring, has not been documented or quantified. The rotational grazing strategy of the proposed action will prevent livestock from being in the same area at the same time two years in a row, will reduce the amount of time a herd spends in one area, and will prevent livestock from being in the species habitat during the critical growing season when the species is most vulnerable to the trampling effects of livestock trailing. However, the loss of individual plants resulting from livestock use is possible. Activities occurring under the proposed action may increase equipment and vehicle use, vegetation disturbance, and surface disturbance in Uinta basin hookless cactus and Pariette cactus habitats. These activities may result in vegetation disturbance, removal, alteration; and soil disturbance.

D. Ute ladies'-tresses

Habitat for the Ute ladies'-tresses must consist of sufficient hydrology to keep soils moist at the surface throughout the growing season. Suitable habitat is generally found along perennial streams and rivers such as moist stream edges, high flow channels, old oxbows, vegetated point bars, and other fluvial features (USFWS 1992, Fertig et. al. 1994; USFWS 1995; Fertig 2000). Ute ladies'-tresses are known to occur in the Cub Creek drainage that runs through the northern portion of the Green River allotment although individual plants have not been located within this grazing allotment.

The critical season for the Ute ladies'-tresses generally occurs from mid-July through August for flower and fruit production. However, in some locations the plant may bloom in early July or may still be in flower as late as early October. The rotational grazing strategy of the proposed action will prevent livestock from being in the same area at the same time two years in a row, will reduce the amount of time a herd spends in one area, and will prevent livestock from being in the species habitat during the majority of the critical growing season when the species is most vulnerable to the trampling effects of livestock trailing. However, the loss of individual plants resulting from livestock use is possible, and there is the potential for Ute ladies'-tresses to be flowering when livestock are present in October of each year. Activities occurring under the proposed action may increase equipment and vehicle use, vegetation disturbance, and surface disturbance in Ute ladies'-tresses habitat. These activities may result in vegetation disturbance, removal, alteration; and soil disturbance.

E. Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub

All four of the listed Colorado River fish require the same Primary Constituent Elements (PCEs) essential for their survival. Because the amount of designated critical habitat varies for each of the four species, the amount of habitat will vary; however, the effects would be the same for all critical habitat within the action area.

Water, physical habitat, and the biological environment are the PCEs of critical habitat. This includes a quantity of water of sufficient quality that is delivered to a specific location in accordance with a hydrologic regime that is required for the particular life stage for each species. The physical habitat includes areas of the Colorado River system that are inhabited or potentially habitable for use in spawning and feeding, as a nursery, or serve as corridors between these areas. In addition, oxbows, backwaters, and other areas in the 100-year floodplain, when inundated, provide access to spawning, nursery, feeding, and rearing habitats. Food supply, predation, and competition are important elements of the biological environment.

Activities occurring under the proposed action may increase equipment and vehicle use, vegetation disturbance, and surface disturbance in the drainages of Colorado River fish habitats. These activities may result in vegetation disturbance, removal, alteration; and soil disturbance. Vegetation alteration or removal may decrease cover, soil stability, stream morphology, forage base, water chemistry, water temperature, and nutrient levels. Livestock management decisions may negatively affect the primary constituent elements for the Colorado River fish species designated critical habitat. Increased erosion associated with surface disturbance may degrade water quality and increase sediment in the water. This could increase water temperature, decrease food supply, increase turbidity, and deplete oxygen. This could alter a specific hydraulic water regime which is required by a particular life stage for each species. As a result, there may be decreases in reproductive success, and decreases in survival at all life stages (egg, larval, young of year, juvenile, and adult).

V. Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Declines in the abundance or range of many special status species have been attributed to various human activities on federal, state, and private lands, such as human population expansion and associated infrastructure development; construction and operation of dams along major waterways; water retention, diversion, or dewatering of springs, wetlands, or streams; recreation, including off-road vehicle activity; expansion of agricultural or grazing activities, including alteration or clearing of native habitats for domestic animals or crops; and introductions of non-native plant, wildlife, or fish or other aquatic species, which can alter native habitats or out-compete or prey upon native species. Many of these activities are expected to continue on state and private lands within the range of the various federally protected wildlife, fish, and plant species, and could contribute to cumulative effects to the species within the action area of these grazing permit renewals. Species with small population sizes, endemic locations, or slow reproductive rates, or species that primarily occur on non-federal lands where landholders may not participate in recovery efforts, would generally be highly susceptible to cumulative effects.

A. Plant Species of Concern

Cumulative effects to the clay reed-mustard, shrubby reed-mustard, Uinta Basin hookless cactus, Pariette cactus, and Ute ladies'-tresses under the proposed action would include, but are not limited to, the following broad types of impacts:

- Changes in land use patterns or practices that adversely affect a species' suitable or potential habitat;
- Encroachment of human development into a species' critical, suitable, or potential habitat; and
- Management actions by some, or all, of the following groups, on lands adjoining or upstream of BLM-administered lands:
    - State of Utah;
    - County Governments in Utah;
    - Local Governments in Utah; and
    - Private landholders in Utah.

Except for the Ute ladies'-tresses, the above listed plant species occur primarily within BLM management boundaries. In these areas, the species' locations are surrounded by a checkerboard pattern of land ownership including Federal, State, and private landowners. They are susceptible to activities on State and private lands. Many of these activities, such as livestock grazing, oil and gas exploration and development, research, human population expansion and associated infrastructure (increased trails and roads), and recreation activities (e.g. off-road vehicles), are expected to continue on State and private lands within the species' range. Contributing as cumulative effects to the proposed action, all these activities will continue to affect populations of these species by decreasing abundance, injuring plants, adversely affecting pollinators, and further adversely impacting occupied and suitable habitat.

B. Colorado River Fishes

Reasonably foreseeable future activities that may affect river-related resources in the area include oil and gas exploration and development, fire management, irrigation, urban development, recreational activities, Central Utah Project, Colorado River Salinity Control Project, and activities associated with the Upper Colorado River Endangered Fish Recovery Program. Implementation of all or any of these projects has affected and continues to affect the environment including but not limited to water quality, water rights, socioeconomic and wildlife resources.

Cumulative effects to the Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub would include the following types of impacts:

- Changes in land use patterns that would further fragment, modify, or destroy potential spawning sites or designated critical habitat;
- Shoreline recreational activities and encroachment of human development that would remove upland or riparian/wetland vegetation and potentially degrade water quality;
- Competition with, and predation by, exotic fish species introduced by anglers or other sources.

VI. Conclusion

The conclusions of this biological opinion are based on full implementation of the project as described in the "Description of Proposed Action" section of this document, including the resource protection measures that were incorporated into the design of the proposed action.

A. Plant Species of Concern

After reviewing the current status of the clay reed-mustard, shrubby reed-mustard, Uinta Basin hookless cactus, Pariette cactus, and the Ute ladies'-tresses; the environmental baseline for the action area; the effects of the proposed action; and the cumulative effects; it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of these species, and is not likely to destroy or adversely modify designated critical habitat as none (critical habitat) has been designated. We base our decision on the following:

- The continuation of winter grazing will alleviate possible adverse impacts to the species and the implementation of deferred rotation grazing systems will reduce direct grazing effects to this species.

- The proposed action includes conservation measures to avoid plants and minimize impacts to occupied habitats.

B. Colorado River Fishes

After reviewing the current status of the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Project, as described in this biological opinion, is not likely to jeopardize the continued existence of endangered fish and the proposed project is not likely to destroy or adversely modify designated critical habitat. We base our decision on the following:

- The riparian-wetland areas are meeting or making progress towards meeting Proper Functioning Condition. If future monitoring indicates non-conformance with BLM standards, the permit may be modified and reissued with Terms and Conditions that will result in conformance.

- The proposed action includes conservation measures to minimize impacts to riparian habitats.

- The proposed season of use for allotments adjacent to and including designated critical habitat avoids important spawning and larval fish periods during the summer months.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3). Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued for the exemption in section 7(o)(2) to apply. BLM has a continuing duty to regulate the activity covered by this incidental take statement. If BLM (1) fails to assume and implement the terms and conditions or (2) fails to require the permittee to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, either BLM or the permittee must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR § 402.14(i)(3)]

The Service has developed the following incidental take statement based on the premise that the applicant committed conservation measures will be implemented.

Amount or Extent of Take Anticipated

The Service has developed the following incidental take statement based on the premise that the applicant committed conservation measures will be implemented. The Service anticipates that take will be comprised of three forms: degradation of water quality, alterations to physical habitat, and direct loss of individuals.

The Service anticipates that all age classes of Colorado pikeminnow, humpback chub, razorback sucker, and bonytail could be taken from within the Green River Basin as result of this proposed action. The incidental take is expected to be in the form of harm (death or injury) and harassment due to; 1) increased erosion associated with surface disturbance that may degrade water quality and increase sediment in the water, 2) loss or degradation of essential habitat used in spawning and feeding, as a nursery, or as corridors between these areas, and 3) direct loss of individuals due to trampling from livestock.

Age-0 Colorado pikeminnow, Age-0 humpback chub, Age-0 razorback sucker, and Age-0 bonytail could be taken in shoreline habitats and backwaters within the Green and White Rivers as a result of the proposed action (the Service considers Age-0 to be ≤ 40 mm total length). The incidental take is expected to be in the form of harm (death or injury) due to trampling from livestock entering backwaters or other low velocity waters for feeding or watering. These habitats are preferred by the early life stages of the above listed fish species. No take of older life stages resulting from trampling is anticipated.

The Service anticipates that take could occur as a result of habitat loss from livestock grazing and disturbance in riparian areas and backwaters located within the project area. In addition, take could occur as a result of sedimentation and degradation of water quality within the project area and up to 0.25 miles downstream of the project area within the Green and White Rivers. Grazing allotments proposed for renewal under the proposed action occur along approximately 41 miles of the White River and approximately 83 miles of the Green River (52 miles occur above and 31 miles occur below the confluence of the Green and White Rivers). Take of individual fish will be difficult to calculate for the following reason: incidental take of actual species numbers may be difficult to detect because finding a dead or impaired specimen is unlikely, and incidental take from loss of habitat and degradation of water quality is difficult to quantify.

Based on the above information, the Service authorizes take of habitat not to exceed 0.25 river miles from the project area within the Green and White Rivers and including the project area within the Green (83 miles) and White (41 miles) Rivers. All take will be in the form of harm that would occur from sedimentation and degradation of water quality occurring within the project area as a result of the proposed action.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Based on this, the Service is not issuing reasonable and prudent measures or terms and conditions at this time. Implementation of the applicant committed conservation measures will minimize take of the four federally endangered fish species.

VII. Reporting Requirements

The incidental take statement provided in this biological opinion satisfies the requirements of the Endangered Species Act of 1973, as amended. This statement does not constitute an authorization for take of listed migratory birds under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, or any other Federal statute.

Upon locating dead, injured, or sick listed species, immediate notification must be made to the Service's Salt Lake City Field Office at (801) 975-3330 and the Service's Division of Law Enforcement, Ogden, Utah, at (801) 625-5570. Pertinent information including the date, time,

location, and possible cause of injury or mortality of each species shall be recorded and provided to the Service. Instructions for proper care, handling, transport, and disposition of such specimens will be issued by the Service's Division of Law Enforcement. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state.

VIII. Conservation Recommendations

Section 7(a)(1) of the Act directs Federal Agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. BLM should work with the oil and gas companies, the Ute Tribe, and the Service to develop a restoration plan for all actions affecting listed plant species. The restoration plan should include setting aside land for the protection of the species as well as determining which method of restoration is most appropriate (i.e. seeding or planting).
2. Annual monitoring of all listed plant populations within the grazing allotments should be initiated as soon as possible. Tracking the status of individuals within grazing allotments would allow for adaptive protection measures if it is determined that plants are being negatively impacted.
3. Annual reports, including spatial data, should be shared amongst the BLM and Service.
4. The BLM should initiate an invasive weed management plan that would enhance the habitat of listed plant species and forage for livestock.
5. During the active growing season of listed plant species, grazing should be managed in a way that minimizes the potential for direct disturbance to plants and their occupied habitats.
6. Prior to surface disturbing activities in habitat for listed plant species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

Reinitiation – Closing Statement

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances

where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the formulation of this biological opinion and your interest in conserving endangered species. If further assistance is needed or you have any questions, please contact Laura Romin, at (801) 975-3330 extension 142, or Bekee Megown, at (801) 975-3330 extension 146.

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